

REMARKS

Claims 1-30 are pending in the application, and claims 1-10 and 24-26 are allowed. The Applicants' attorney has amended claims 11, 15, 20-23, 27, and 29-30. **If after considering this response the Examiner does not allow all of the pending claims, then the Applicants' attorney requests that the Examiner phone him at (425)-455-5575 to schedule a telephone interview before issuing a subsequent Office Action.**

Rejection of Claims 11, 16, 17, 19, 22, 23, 27, 28, and 30 Under 35 U.S.C.102(a) As Being Unpatentable Over U.S. Patent 6,459,613 to Lin

Claim 11

Claim 11 as amended recites an input branch operable to conduct an input current having an amplitude and to generate an input signal that is related to the input current, an output branch operable to generate an output signal that is related to a combination of a reference current and a mirror current that is a mirror of the input current, and a comparator circuit operable to determine the amplitude of the input current from the input signal and the output signal.

For example, referring to FIG. 3a of the patent application, a sense amplifier 300 includes an input branch (transistor 305m, PC 215m) that conducts an input current I_m having an amplitude, and that generates an input signal (the voltage at the drain of the transistor 305m) that is related to I_m . The sense amplifier 300 also includes an output branch (e.g., transistor 305r0) that is coupled to the input branch and that generates an output signal (the voltage at the drain of the transistor 305r0) that is related to a combination of a reference current I_{r0} and a mirror current (the current sourced by the transistor 305r0, which forms a current mirror with the transistor 305m) that is a mirror of the input current I_m . A comparator circuit (e.g., comparator 225r0) determines the amplitude of I_m by comparing the input signal (the voltage at the drain of the transistor 305m) and the output signal (the voltage at the drain of the transistor 305r0).

In contrast, Lin does not disclose the claimed sense amplifier. Referring, e.g., to Lin's FIG. 2, Lin's circuit 2 includes an input branch (transistor MPi) that conducts an input current I_{cell} having an amplitude, and that generates an input signal (the voltage at node

214) that is related to I_{cell} . The circuit 2 also includes an output branch (e.g., transistor MPo) that is coupled to the input branch and that generates an output signal (the voltage at node 211(a)) that is related to a combination of a reference current I_{ref1} and a mirror current (here I_{cell} , the current sourced by the transistor MPo, which forms a 1:1 current mirror with the transistor MPi) that is a mirror of I_{cell} . But Lin's circuit 2 includes no comparator or other circuit that determines the amplitude of I_{cell} from the input signal (the voltage at node 214) and the output signal (the voltage at node 211(a)). Instead, Lin's circuit 2 determines the amplitude of I_{cell} solely from the output signal (the voltage at node 211(a)).

Claims 16-17 and 19

These claims are patentable by virtue of their dependencies from claim 11.

Claims 22, 23, and 27

These claims are patentable for reasons similar to those discussed above in support of the patentability of claim 11 in view of Lin.

Claims 28 and 30

These claims are patentable by virtue of their dependencies from claim 27.

Rejection of Claims 11-14, 16-18, 22-23, and 27-28 Under 35 U.S.C.102(e) As Being Unpatentable Over U.S. Patent 6,567,330 to Fujita

Claim 11

Fujita does not disclose the sense amplifier recited in claim 11 as amended. Referring, e.g., to Fujita's FIG. 2A, Fujita's circuit includes an input branch 4a that conducts an input current I_{cell} having an amplitude, and that generates an input signal (the voltage at node SN) that is related to I_{cell} . The circuit 2 also includes an output branch 6 that is coupled to the input branch 4a and that generates an output signal RSN, and includes a comparator 4b that compares SN and RSN. But unlike the claimed output branch, Fujita's

output branch 6 does not generate the output signal RSN related to a combination of a reference current and a mirror current that is a mirror of the input current I_{cell} . The only mirror of the current I_{cell} is the mirror current sourced by the transistor QP13, and the output branch 6 does not generate RSN related to the mirror current sourced by the transistor QP13.

Claims 12-14 and 16-18

These claims are patentable by virtue of their dependencies from claim 11.

Claims 22-23 and 27

These claims are patentable for reasons similar to those discussed above in support of the patentability of claim 11 in view of Fujita.

Claim 28

This claim is patentable by virtue of its dependency from claim 27.

Rejection of Claims 11, 13, 16-18, 22, and 27-28 Under 35 U.S.C.102(b) As Being Unpatentable Over U.S. Patent 6,044,019 to Cernea

Claim 11

Cernea does not disclose the sense amplifier recited in claim 11. Referring, *e.g.*, to Cernea's FIG. 12, an input branch (transistor 302) conducts an input current I_c having an amplitude, and generates an input signal (the voltage at the drain of the transistor 302) that is related to I_c . An output branch (*e.g.*, transistor 304) is coupled to the input branch and generates an output signal (the voltage at the drain of the transistor 304) that is related to a combination of a reference current I_{r1} and a mirror current I_{c1} that is a mirror of I_c . But Cernea's circuit includes no comparator or other circuit that determines the amplitude of I_c from the input signal (the voltage at the drain of the transistor 302) and the output signal (the voltage at the drain of the transistor 304). Instead, Cernea's comparator 400

determines the amplitude of I_c solely from the output signal (the voltage at the drain of the transistor 304).

Claims 13 and 16-18

These claims are patentable by virtue of their dependencies from claim 11.

Claims 22 and 27

These claims are patentable for reasons similar to those discussed above in support of the patentability of claim 11 in view of Cernea.

Claim 28

This claim is patentable by virtue of its dependency from claim 27.

Allowable Subject Matter

The Applicants' attorney has rewritten objected-to claims 15, 20-21, and 29 as allowable independent claims.

Furthermore, the Applicants' attorney submits that claims 1-10 and 24-26 may be allowable for reasons other than those listed by the Examiner.

CONCLUSION


In view of the foregoing and in addition to the allowed claims 1-10 and 24-26, claims 12-14, 16-19, and 28 as previously pending and claims 11, 15, 20-23, 27, and 29-30 as amended are in condition for allowance. Therefore, the issuance of a formal Notice of Allowance at an early date is respectfully requested.

In the event additional fees are due as a result of this amendment, payment has been enclosed in the form of a check. However, you are hereby authorized to charge deficiencies or credit overpayment to Deposit Account No. 07-1897.

Respectfully submitted,

GRAYBEAL JACKSON HALEY LLP

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Bryan A. Santarelli
Registration No. 37,560
Attorney for Applicants
155 - 108th Avenue N.E., Suite 350
Bellevue, WA 98004-5973
(425) 455-5575 ext. 110